

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A fuel cell comprising a fuel cell separator, the fuel cell separator having a central part and an outer peripheral part, wherein multiple gas passages for guiding reaction gases and multiple reaction product passages for guiding a reaction product are provided by the outer peripheral part, the reaction gases being guided from the gas passages to the central part and reaction product produced at the central part being guided to the reaction product passages,

wherein the central part comprises a metal member, the peripheral part is a rubber member, and a projecting part surrounding the central part is formed integrally with the rubber member,

wherein an inner portion of the peripheral part overlays the central part, said projecting part being provided by said inner portion of said peripheral part, and an outer portion of the peripheral part extends away from the central part, and the gas passages and reaction product passages are formed through said outer portion, and

wherein said peripheral part has a first face and a second face opposite said first face, said first face having projecting passage seal parts formed

thereon, the projecting seal parts formed along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, and said second face having passage recesses formed thereon along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, wherein the projecting passage seal parts are formed so that when the fuel cell is assembled, each projecting seal part presses against a corresponding passage recess on an adjacent fuel cell separator through gas passages and reaction product passages of an electrolyte membrane.

2. (Previously Presented) The fuel cell according to claim 1, wherein the rubber member is made of silicone rubber.

3. (Previously Presented) A method for manufacturing a fuel cell comprising a fuel cell separator, said fuel cell separator having a silicon rubber peripheral part and a metal central part, wherein multiple gas passages for guiding reaction gases and multiple reaction product passages for guiding a reaction product are provided by said peripheral part, reaction gases being guided from the gas passages to the metal central part and reaction product produced at the central part being guided to the reaction product passages, wherein said peripheral part has a first face and a second face opposite the first face, said first face having projecting passage seal parts formed thereon, the projecting seal parts formed along respective edges of the gas passages

and the reaction product passages so as to individually surround the gas passages and the reaction product passages, and said second face having passage recesses formed thereon along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, wherein the projecting passage seal parts are formed so that when the fuel cell is assembled, each projecting seal part presses against a corresponding passage recess on an adjacent fuel cell separator through gas passages and reaction product passages of an electrolyte membrane,

comprising the steps of:

disposing the metal central part of the fuel cell separator in a cavity of an injection-molding mold;

maintaining an inside of the cavity at a low temperature so that silicone rubber does not reactively set and maintains a low viscosity;

injecting liquid silicone rubber into the cavity while said cavity is at the low temperature and guiding the liquid silicone rubber past an edge part of the central part;

forming the gas passages and the reaction product passages through the liquid silicone rubber that has been guided past the edge part of the central part; and

heating the inside of the cavity to reactively set the silicone rubber guided to the edge part of the central part.

4. (Currently Amended) A method for manufacturing a fuel cell

comprising a fuel cell separator, said fuel cell separator having a silicone rubber peripheral part and a metal central part, wherein multiple gas passages for guiding reaction gases and multiple reaction product passages for guiding a reaction product are provided by the peripheral part, reaction gases being guided from the gas passages to the metal central part and reaction product produced at the central part being guided to the reaction product passages, ~~wherein said peripheral part has a first face and a second face opposite the first face, said first face having projecting passage seal parts formed thereon, the projecting seal parts formed along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, and said second face having passage recesses formed thereon along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, wherein the projecting passage seal parts are formed so that when the fuel cell is assembled, each projecting seal part presses against a corresponding passage recess on an adjacent fuel cell separator through gas passages and reaction product passages of an electrolyte membrane,~~

comprising the steps of:

disposing the metal central part of the fuel cell separator in a cavity of an injection-molding mold;

maintaining an inside of the cavity at a low temperature so that silicone rubber does not reactively set and maintains a low viscosity;

injecting liquid silicone rubber into the cavity while said cavity is at the

low temperature and guiding the liquid silicone rubber to an edge part of the central part of the fuel cell separator; and

heating the central part of the fuel cell separator without heating the injection-molding mold to reactively set the silicone rubber guided to the edge part of the central part.

5. (Previously Presented) The fuel cell according to claim 1, wherein at least one support hole is defined through the central part adjacent to an edge of the central part, the support opening being filled by the rubber member so as to attach the rubber member to the central part.

6. (Previously Presented) The fuel cell according to claim 5, wherein the rubber member is made of silicone rubber.

7. (Previously Presented) The method for manufacturing the fuel cell according to claim 4, further comprising the steps of:

guiding the liquid silicone rubber over and past the edge of the central part such that the silicone rubber extends away from the central part; and
forming the gas passages and the reaction product passages through the liquid silicone rubber at locations spaced from the central part.

8. (Previously Presented) The method for manufacturing the fuel cell according to claim 3, further comprising the step of:

filling a hole defined through the central part with liquid silicone rubber,

the hole being inwardly adjacent to the edge part of the central part, so as to positively interconnect the central part and the peripheral part.

9. (Previously Presented) The method for manufacturing the fuel cell according to claim 4, further comprising the step of:

filling a hole defined through the central part with liquid silicone rubber, the hole being inwardly adjacent to the edge part of the central part, so as to positively interconnect the central part and the peripheral part.

10. (New) The method for manufacturing the fuel cell according to claim 4, wherein said peripheral part has a first face and a second face opposite the first face, said first face having projecting passage seal parts formed thereon, the projecting seal parts being formed along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, and said second face having passage recesses formed thereon along respective edges of the gas passages and the reaction product passages so as to individually surround the gas passages and the reaction product passages, wherein the projecting passage seal parts are formed so that when the fuel cell is assembled, each projecting passage seal part presses against a corresponding passage recess on an additional fuel cell separator through gas passages and reaction product passages of an electrolyte membrane.